



MIDDLE TENNESSEE CHAPTER NEWSLETTER

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Issue 8

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Upcoming Events

- **August 14th** - LEED Version 3.0 Visioning Workshop. Held at Clemson University
- **August 24th** (Lunch time meeting from 11:30 to 1:00) - Government Perspective
- **September 28th** (Lunch time meeting from 11:30 to 1:00) - Sustainable Design for Residential
- **October 26th** Green Tie Gala - Speaker: Rick Fedrizzi
- **November/December** - No Meeting



Letter from the Chair Busting the Cost Myth – Hospitals -Kim Shinn

Busting the cost myth is still our theme for the year. This is a big issue for many of us in the design and construction business, and I got a personal reminder this month. I am involved as the “green building consultant” on a hospital addition project. This project was planned and budgeted in 2002. If you can’t remember that far back (I had hair then), construction prices had experienced little or no inflation beyond the general market level for several years. The hospital board came up with what they thought was a good budget for this project, based on recent bids they had seen for similar work in their area. And being forward thinking, they then set aside an additional 5% to handle inflation, contingencies and, yes, seeking LEED certification.

Fast forward to today. The construction materials market has experienced major cost increases, practically across the board. Some people blame China’s construction boom, some blame the global political instability and rising energy prices, some blame me. No matter who is to blame, construction material cost inflation is running several times the general inflation rate and is eating into budgets that were set more than a couple of years ago.

The latest cost estimates from the hospital’s construction management firm show that the project has eaten up all its contingency and is still roughly 15% over budget. When the Owner asked for an explanation of where the cost overruns were coming from, the construction manager wasn’t able to itemize the material cost inflation, but could zero in on the

cost of LEED. I got a chance to look at the spreadsheet that was given to the Owner and saw that, in most cases, LEED had little or no additional cost impact. The one LEED credit that showed a significant cost over “conventional practice” was Indoor Environmental Quality credit 3.1 – Construction IAQ Management. When asked to explain, the construction manager cited two major reasons. The first was an added cost from the sheet

metal subcontractor for capping and covering uninstalled duct lengths and fittings that were delivered and stored on site. The second was for additional construction management staff devoted to keeping track of the Construction IAQ plan and program.



Here’s a quote from a memo to the Owner about these costs: “We are concerned about the possible elimination of EQc3.1 – Construction IAQ Plan During Construction, and the contractor’s listing it as additional cost. We mentioned these concerns briefly during the last LEED meeting, and the architect has asked me to relay our concerns directly to you. We are well aware of the budget issues and ongoing VE effort - and although we may be getting a LEED point for this work, it is work that we feel is the standard of care in healthcare construction today – in other words, things that we should be doing, LEED point or no LEED point.”

“We recommend the cost be further substantiated and broken down by the contractor, so that we can better determine what’s in that cost. In our opinion, none of this should be above contractor’s standard of care for a project of this type. We are not comfortable with the concept (or the perception) of eliminating





Busting the Cost Myth

-Kim Shin

continued

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good indoor air quality measures from the project. Patient Safety and Infection Control are our concerns too, as I know they are yours."

In other words, green design and construction practice is good design and construction practice, and it is what we should expect from all projects.

Added Cost Creates AIA List Serve Chatter

On another front, I subscribe to a list serve for the AIA Committee on the Environment. Last Friday, the topic of perceived additional cost of green design and construction lit up the list serve. Emails were flying across cyber space at a fairly high rate – I counted 28 in the course of the day. Here are several excerpts:

"A LEED Silver building that is 30 to 45% better than ASHRAE 90.1 1999 is readily achievable at NO additional cost. Our firm and the USGBC have a lot of case studies to back this up."

"Compared to what? Code minimum construction for budget driven builders.... I don't think so - and a relatively intelligent but not environmentally conscious client knows so. If you are talking about the difference between higher end construction pre-green thinking and your goal, I would buy it."

"The best green decision in many cases is to choose an architect who understands programming, works in-depth with the client to identify real choices about space, systems, location, and materials, and who makes the "green" disappear in the efficiency and beauty of the finished project."

"We really need to drop the comparisons. Think of it this way: There are awe inspiring buildings that "sing" in the perfection of their use of materials, space relationships, and relationship with the natural and built environment around them that cost 100\$ psf... and there are examples of worthless buildings with no comprehensive style or respect for their environment or understanding of the end users that cost 500\$ psf. Green must be part of the program and an integrated element of the design process. The design team and the owner can do exceptional things if they are willing to explore a bit."



"When a client wants a granite countertop they don't ask about payback. It is a choice and they may choose to use "lesser" finish in another area to gain them their preferred material for that countertop. When they want a vegetated roof they may have to simplify other systems to accommodate any perceived additional costs. The gift should be the fact that their roof will last longer, assist with stormwater management for at least part of the year, and look wonderful."

"We should also encourage the "budget driven builders" to understand and use the strategies that will make their bottom line even better. Building to modules, construction waste management practices, and not tearing up the whole site are achievable objectives that will save money for the contractor once they get used to the change in practice. We would do ourselves a disservice to continue to relegate "green" to the category of "higher end construction". It is "thoughtful (design and) construction" no matter the budget at hand."

"As a mechanical engineer, I would note that the most costly sustainability approach is the request to make a standard building design "more efficient" through the mechanical system. That is sometimes like trying to attach floatation devices to a sinking ship. We may get it to float, but it won't go very fast. The integrated approach, where the building itself does as much of the conditioning as possible (the living building approach), normally with the consultation assistance of the mechanical, energy, and LEED consultants, is the most cost-effective approach."

Dream big. Design bold. Do good.

Kim





Installing Solar Panels in Nashville

(Solar panel pioneer describes his experience with solar panel installation)

-Eddie H. Doss

It seemed so simple. Buy some PV cells. Buy an inverter. Set a meter base for NES. Wire it all up in series and connect it to that spare feed in my main entrance panel. Within two weeks I'd be making electricity. I was about six months behind schedule and 100% over budget when it finally sank in that if solar were cheap or easy everyone would be doing it.

My foray into PV systems began seriously in 1998 when TVA gave a seminar in Knoxville educating all interested parties about PV systems and the new Green Power Switch program. I was interested in participating, but NES, like most of the TVA power distributors, was not taking part in the program. After several years of intermittent letter writing by members of the Tennessee Solar Energy Association, NES agreed to enter into Green Power Generation program. They started the pilot program in 2004 with a goal of 5 residential generation sites in Nashville. I accepted their offer and began planning and procuring my PV system in June 2004.

I began searching for PV equipment suppliers on the Internet and found my first hurdle, the Green Power business. Most people in the PV business are great caretakers of the earth and have wonderful intentions, but to be honest, they are mediocre in business practices and sales. For over a month I called and e-mailed vendors requesting quotes, availability, and delivery dates on PV equipment. Some offered equipment and systems that were not well suited to my installation. This included wind generators with stand alone battery systems that required me to forever turn off my AC unit and replace \$8,000.00 worth of batteries every five years. But most simply didn't respond at all. Eventually I reached the local distributor of SW Photovoltaic and found someone that I could deal with. They helped me plan a system and establish a budget. At that point I considered stopping the project since my 1.8 kW system was no longer available for \$6,000.00. Demand had doubled the price of the PV Panels in just a few months. But being quite stubborn at

times, I placed an order for the system. This brought about the next hurdle, delivery.

In 2004, Germany, Denmark, and California began offering tax incentives to install home PV Systems, creating a worldwide shortage of PV cells. After paying the cash deposit in early August, I had not received notice of shipment of my PV cells in late November. After many discussions and promises I received my PV cells in January, just in time for wet weather and a difficult winter installation. Today the supply situation has eased somewhat, but be prepared to wait several months for PV cells. After I had the PV equipment on site I



prepared a drawing package and began details of the installation, all of which had to be drawn from scratch. PV cells have a large wind uplift. Luckily Southwest PV had the expertise to assist me with the mounting details. They also prepared a wiring schematic.

Metro Codes was very accepting and quite interested in assisting with my installation. They granted me a building permit and I began installing my system, the final hurdle. The details of PV construction can be tedious. Should I assemble panels on the ground or on the roof? Can I lift assembled panels? Will my roof leak? Should the terminations be soldered? How should the ground wires be routed? Where should I mount the bypass and blocking diodes? How should the disconnects be mounted? ; Is there a possibility of lightning today? Should I use stainless steel fasteners? Can I make hot terminations safely?

I tested the Sunny Boy inverter thorough-



ly before anyone else viewed the system. NES set my PV Meter and we energized the system in June 2005. We verified that the inverter does disconnect whenever the AC power is disrupted. For a couple of months NES billed me for putting PV power into the grid at my rate, \$0.15/Kw-hour, but they've quickly corrected all billing credits. NES and Metro codes have been very accommodating.

The system has operated quietly every day with absolutely no maintenance. Cleaning is not recommended. Even before direct sunlight strikes the PV panels the inverter has enough power to wake up. It checks the TVA grid to make sure that 110 VAC is there at 60 Hz. If the grid is stable for five minutes the inverter synchronizes and connects to the grid. The inverter maintains the maximum power output level by continually adjusting the voltage across the PV cells. If anything on the NES side disrupts power, the inverter disconnects immediately and remains disconnected until the grid is stable for five minutes. As the sun sets the inverter powers down, disconnects, and goes to sleep. The power output has been close to that predicted by SW PV every month, considering my walnut tree and my neighbor's oak have now grown enough to shade my panels late in day.

So I'm now the owner of a fully functional PV system and in 20 plus years I'll see the payback on my investment. Would I do this again? Probably. But it's not an easy project. Roof mounting problems alone are intimidating. But like any project, I've learned a lot and could do it better and faster.

Eddie H. Doss, PE, CIPE



Emerging Green Builders

-Keith Loiseau



The Emerging Green Builders is an organization that offers students and young professionals opportunities to network with their peers to create opportunities for local outreach, education, and experience in green building fields. Begun through the USGBC as a nationwide committee, members of Emerging Green Builders have access to a variety of green building resources and opportunities through the local chapter of the USGBC.

Since our founding last spring, the local EGBs have formed a group comprised of around 80 students, young professionals, and educators in the Middle Tennessee region, including members of the Middle Tennessee Chapter of the U.S. Green Building Council. We officially began meeting in March 2005 with a kick-off party co-sponsored by Turner Construction in April 2005, held in the Featheringill Hall Atrium at Vanderbilt University. LEED consultants for the Vanderbilt College Halls project Paul McCowan and Jacob Halcomb served as the featured speakers for the evening. This event served to introduce everyone to the organization and began building a network of students, young professionals, and professional members of the USGBC.



We started gaining momentum with monthly meetings and activities and went on our first tour at Hastings Associates Architects' LEED certified office building renovation. Our group determined that we would operate best as a facilitated open-forum for the exchange of ideas and opportunities, forming committees as needed to organize specific activities. In addition, Emerging Green Builders are invited to join the local chapter of the USGBC at a discounted rate and attend meetings to hear speakers and meet some of Nashville's professionals involved in the movement for green design.

Other tours include the Tennessee Waste Management facility, a tour of the green roof on the Westview Condos in downtown Nashville, and the Vanderbilt Freshmen Commons LEED certified dorms currently under construction. We were also present at the Earth Day celebration at Centennial Park, working to promote green design to the Nashville community. Some of our members formed a committee to teach a class through Habitat for Humanity on green living practices. Our celebration of one year as the Middle Tennessee Emerging Green Builders was held at the home of Vanderbilt campus architect Keith Loiseau, a model of green innovative design designed and built by Keith himself.

For the upcoming year we are working to expand our membership to include more students at Vanderbilt University, Tennessee State University, and Middle Tennessee State University as well as involving students from Belmont and Fisk Universities. We have begun to plan monthly activities for the fall, and will begin with a kick-off event in late August to welcome back students and introduce new members. We are also working on additional opportunities for those interested, such as raising awareness through teaching opportunities like the Habitat for Humanity classes or gaining hands-on experience working in an Emerging Green Builders studio on basic green design-build projects around Nashville. There is a nation-wide EGB localized design competition that we aim to participate in

for the 2007 contest. Funding from the USGBC will hopefully enable us to send a few of our members to the Greenbuild Conference in Denver this November and increase our exposure to green building resources on a national scale. For more information or to become a member of the Middle Tennessee Emerging Green Builders, please contact Erin Feeney at erin.a.feeney@vanderbilt.edu or Ed Wansing at ewansing@gouldturner.com.





What I've Learned "So Far"

-Bill Hardin

I have been an active member of the Nashville chapter of the USGBC since about 20 of us started meeting at the old Neuhoﬀ packing plant. My initial involvement with USGBC was to promote my product to the green community. I thought this group would provide me with a monthly audience to listen to me talk and talk and talk about how incredible my product was for the sustainable community. I wanted to become a successful manufacturer's rep for my product, and in my effort to do this, I became more knowledgeable of ways I could help bring about changes in the ways many people view the built environment.

I have seen the chapter grow from 20 individuals to around 130, and getting larger every year. Instead of preaching to the choir, and telling you how we have met with so and so, and how we hope to do this and that in the future, I'm going to tell you what I've learned in 5 or so years of involvement with the local chapter of

the USGBC. First things first, it's LEED! Not LEEDS!! (Leadership in Energy and Environmental Design)

LEED is very important to those who have worked so hard to establish a brand name. I feel it's a way to encourage someone who needs more information, and who could be invited to a chapter meeting. I have also learned that most successful projects were not successful by accident. The grassroots eﬀorts are paying oﬀ, and we are gradually getting corporate owners and government oﬃcials to understand the incredible benefits of sustainable building; but it's a lot of work to educate and not always a fast and steady progress towards the goal.

I joined the public policy committee about 2 years ago and have worked with my fellow committee members to aﬀect a change in our local and state governments. I would invite you to participate in one of our committees. (Check the list

of committees and chairs in this newsletter.) It is a great way to help our growing chapter, and we need you!!!

Finally, I am proud to be associated with such a diversified group of people who can say that we are aﬀecting the future of Nashville's built environment with our eﬀorts. If you read this far and are a chapter member, you will realize that I'm just a regular guy with a job to do, but more importantly with a passion to do it in a way to promote sustainable principles in our community. If you are thinking about joining this chapter, I will tell you that I distract easily, and my involvement for five years says a lot about how attractive the mission is and how important our job is in promoting the basic principles that will help us all achieve a more healthy and sustainable community to live and work in. Come to a meeting and find out!!



Would you like to:

- be a member?
- be an accredited professional?
- register and certify your building?

Visit us at www.usgbc.org/chapters/middletennessee/

Local Statistics:

Middle Tennessee Chapter Members	129
Middle Tennessee Accredited Professionals	147
Middle Tennessee Certified Projects	2



Calendar

August

Friday 8/11 - Public Policy Committee

Where: Held at Caffeine on Demunbreun

Time: 7:15 am - 8:00 am

Monday 8/14 LEED Ver. 3.0 Visioning Workshop

Where: Advanced Materials Research Lab, Clemson University

Time: 8:30 am - 4:30 pm

Workshop Purpose

LEED Version 3.0 is envisioned as the outcome of a continuous improvement process, and this workshop is intended to answer a simple guiding question: What is your vision of a sustainable community and how can the next generation of LEED effectively move the market toward that vision?

For Workshop Logistics and more information, <http://chapters.usgbc.org/middletn/Docs/pdf/Invitation.pdf>

For driving directions to the AMRL, http://foulger.clemson.edu/filemgmt_data/files/AMRL.pdf

Thursday 8/17 Communications Committee

Where: Held at I-65 Cracker Barrel

Time: 7:00 am - 8:00 am

Thursday 8/24 - Monthly Membership Meeting

Subject: Government Perspective

Where: Adventure Science Center (800 Fort Negley Blvd. Nashville, TN 37203)

Time: 11:30 am - 1:00 pm

September

Friday 9/1 - First Friday Forum on Storm Water Management

Where: Thomas, Miller & Partners office in Brentwood

Friday 9/1 - Emerging Green Builders

Where: Nashville Sounds Stadium - Budweiser Part Deck

When: Game Time

This will be the kickoff meeting for the new school year.

The ticket prices are around \$23, this includes food and \$1 draft beers.

Please RSVP to ewansing@gouldturner.com



Calendar

Friday 9/8 - Public Policy Committee

Where: Held at Caffeine on Demunbreun

Time: 7:15 am - 8:00 am

Thursday 9/21 Communications Committee

Where: Held at Caffeine on Demonbreun

Time: 7:00 am - 8:00 am

Thursday 9/28 - Monthly Membership Meeting

Subject: Sustainable Design for Residential

Where: Adventure Science Center (800 Fort Negley Blvd. Nashville, TN 37203)

Time: 11:30 am - 1:00 pm

October

Friday 10/6 - First Friday Forum

Friday 10/13 - Public Policy Committee

Where: Held at Caffeine on Demunbreun

Time: 7:15 am - 8:00 am

Thursday 10/19 Communications Committee

Where: Held at Caffeine on Demonbreun

Time: 7:00 am - 8:00 am

Thursday 10/26 - Monthly Membership Meeting

Subject: Green Tie Gala - Speaker: Rick Fedrizzi

Where: City Hall in the Gulch

About: will include a networking cocktail hour, music, and a sit down dinner.